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BY ELECTRONIC FILING

Ex Parte Communication

Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: Ex Parte, The Uniendo a Puerto Rico Fund and the Connect USVI Fund, Connect America Fund, ETC Annual Reports and Certifications, WC Docket Nos. 18-143, 10-90 and 14-58

Dear Ms. Dortch:

Puerto Rico Telephone Company, Inc. ("PRTC"), by its attorneys, hereby files this *ex parte* letter to supplement the record in the Uniendo a Puerto Rico Fund proceeding on the issue of the appropriate minimum geographic area for Stage 2 support and furnish the Commission with additional analysis.[1]

Liberty Cablevision of Puerto Rico, LLC ("Liberty") argues that the Commission should allocate Stage 2 fixed funding for new deployment at the census block group ("CBG") level.[2] Liberty claims that using CBGs will achieve the following results: (1) target funding to unserved or underserved locations; (2) allocate sufficient funds per location; and (3) allocate 70 percent of the support for new builds and 30 percent to hardening the network.[3] As explained herein, these benefits are unlikely to be realized due to the unique challenges of providing service in Puerto Rico. Instead, using CBGs will likely result in providers cherry-picking the most profitable areas while leaving a large number of orphaned areas, an outcome that would hurt consumers in Puerto Rico.

1. Using CBGs would lead to excessive delay.

In Puerto Rico, there are 2,551 CBGs with locations but only 78 municipalities. Awarding support at the CBG level would require the Wireline Competition Bureau ("Bureau") to evaluate

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1 The Uniendo a Puerto Rico Fund and the Connect USVI Fund, Connect America Fund, ETC Annual Reports and Certifications, WC Docket Nos. 18-143, 10-90 and 14-58, FCC 18-57, Order and Notice of Proposed Rulemaking (rel. May 29, 2018) ("*Uniendo NPRM*").

2 Liberty Cablevision of Puerto Rico, LLC, Notice of Ex Parte Communication, WC Docket Nos. 18-143, 10-90, 14-58, p. 1 (dated Nov. 20, 2018) ("*Liberty Ex Parte*").

3 *Id.*, slide 5.

and adjudicate 2,551 transactions versus 78 if municipalities are used. The large disparity in the potential number of transactions will require additional time that goes against the Commission's clearly stated goal of expediting Stage 2 support.[4] While there are far fewer CBGs with locations than census blocks (2,551 vs. 55,405, respectively), the number of CBGs is sufficiently large to lead to a significant number of disputes concerning CBG borders, just like it did in the CAF Phase II process. The Commission can and should avoid the delays that plagued the CAF Phase II process by using municipalities.

The advantages that Liberty describes involve the increased likelihood that a smaller geographic unit such as CBGs would be more homogeneous than municipalities in terms of cost, thus allowing support to be targeted to the unserved areas where it is most needed.[5] However, it follows that these advantages would be magnified if geographic units even smaller than CBGs (such as census blocks) were used as the minimum geographic unit. By not using census blocks, Liberty is implicitly accepting that the practical and administrative issues that come with awarding support to a much larger number of smaller geographic units outweigh the benefits of more precise targeting.

Furthermore, Liberty's proposal that the Commission use CBGs to award support for deployment of new facilities would require identifying those CBGs that are unserved by an unsubsidized provider.[6] In post-hurricane Puerto Rico, obtaining reliable information about which CBGs are served/unserved by an unsubsidized provider will be extremely challenging and is a process that is contentious and fraught with delay. The experience with Liberty illustrates the challenges in obtaining an accurate sense of where providers will continue to offer service post-Hurricane Maria: Liberty's filings with the Commissions and other public statements suggest that it will not necessarily rebuild its network in every location that it served prior to Hurricane María, yet Liberty to this day has not filed any request for authorization of temporary or permanent discontinuance of service as a provider of interconnected VoIP, which it makes it difficult to determine accurately where Liberty may no longer be offering service. PRTC's proposal that the Commission allocate support on a census block level but award aggregated census block support at the municipality level and require that ***all locations*** in the municipality be served by the end of the funding term would eliminate this problem and lead to a more expeditious funding process.

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4 *Uniendo NPRM* at ¶ 45 ("By making the entire territory eligible, we would eliminate the need to establish a challenge process and thus enable a more expeditious completion of the process.").

5 *See Liberty Ex Parte*, slide 6.

6 *See* Liberty Cablevision of Puerto Rico, LLC, Comments, at p. 26 ("[f]or support earmarked for deployment of new facilities, the Commission should exclude from eligibility any area that is currently served by an unsubsidized terrestrial providers of fixed voice and broadband….").

2. Contrary to Liberty's claims, using CBGs will *not* result in more targeted funding.

Given that the number of CBGs in Puerto Rico is 33 times the number of municipalities, one would expect that the use of the CBG as the minimum geographic unit would allow for more targeted support for unserved areas. However, since CBGs are estimated to contain between 600 and 3,000 people regardless of population density,[7] one would also expect that an unserved, rural area would be characterized by CBGs that are geographically larger than the CBGs in the served, urban areas. This may be demonstrated using the two municipalities highlighted in Liberty's presentation: Caguas and Maricao.[8]

Table 1 shows that the rural municipality of Maricao has only a handful of CBGs but a high percentage of unserved locations. The mostly urban municipality of Caguas, in contrast, has a very low percentage of unserved locations and large number of CBGs. These results indicate that CBGs covering mostly rural, unserved areas are *not* much different than municipalities in terms of size and will *not* result in significantly greater precision when targeting support to unserved areas.

Table 1

CBG by Municipio and % Unserved				
	Total CBGs	**Total Locations**	**Total Unserved 12/16**	**% Unserved**
Caguas	116	62,336	4,237	6.80%
Maricao	5	2,757	1,786	64.78%

Further, the use of a smaller geographic unit does not guarantee that more unserved locations will have broadband built to them. A competitive bidding process awarding support based on smaller geographic units allows providers to cherry-pick which units to bid on, which typically do not include the most difficult to serve areas. In CAF Phase II, there were many orphaned census blocks even after they were not selected either as part of a right of first refusal ("ROFR") round or later at auction.

In the *Uniendo NPRM*, the Commission proposed, as a backstop, requiring PRTC to serve these orphaned areas using a share of the existing frozen support.[9] The Commission acknowledged that this would require the determination of "corresponding service obligations to be determined by the Commission after the competitive proposal process is complete."[10] Based

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7 *See* United Census Bureau, "Geographic Terms and Concepts – Block Groups," *available at* https://www.census.gov/geo/reference/gtc/gtc_bg.html (last visited Dec. 12. 2018).

8 *Liberty Ex Parte*, slides 7-8.

9 *Uniendo NPRM* at ¶59.

10 *Id*.

on the CAF Phase II experience, PRTC expects that this process in the Uniendo proceeding will not be a short one.[11] Nor will it be easy under the process proposed in the *Uniendo NPRM* – the allocation of frozen support to the orphaned area will be based on the reserve price that is derived from the CAM results. The likely reason that no provider will bid on the orphaned areas is that the reserve price is too low to induce a provider to bid. The best way to minimize or eliminate orphaned areas is to base the support award on a larger geographic unit and require that all locations within an awarded geographic unit have broadband available at the end of the period.

3. The use of municipalities as the basic geographic area for Stage 2 support is most appropriate due to the low take rates in Puerto Rico.

In the *USF/ICC Transformation Order*, the Commission acknowledged that insular areas such as Puerto Rico face unique circumstances.[12] One such unique circumstance is that providing broadband in certain areas is not commercially viable, not because the per location cost to build and operate it is too high, but because the broadband take rate is so low in Puerto Rico. A low take rate means that the number of subscribers is far lower than the number of locations which, in turn, causes the per subscriber cost to be much greater than the per location cost.

Under the CAF Phase II parameters, high cost was defined as $52.50 per location per month and no support would be provided to eligible census blocks with an average per location cost below that level. In this manner, support would only flow to locations that were "high cost" as estimated by the Commission's CAM model. The Commission recognized the importance of the take rate in determining high cost by calculating the $52.50 high cost benchmark as the result of multiplying an estimated take rate of 75 percent by an estimated ARPU of $70. The CAM model estimated costs above the $52.50 high cost benchmark for only very few census blocks in Puerto Rico. Table 2 below shows that only 9.24 percent of the 55,405 census blocks in Puerto Rico had an estimated cost exceeding the high cost benchmark. These blocks contained only 31,329 locations – 1.88 percent of the total number of locations in Puerto Rico as shown in the CAM model. Under the CAM model logic, providers should have been financially incented to build out to all but 1.88 percent of the locations even without support. However, that was not

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[11] Since the *CAM Inputs Order* was released in April 2014, only one of the three insular carriers (Alaska Communications Systems) has had its frozen support service obligations determined by the Commission. *See* Connect America Fund; High-Cost Universal Service Support, WC Docket Nos. 10-90 and 05-337, Report and Order, 29 FCC Rcd 3964 (WCB 2014).

[12] Connect America Fund *et al*., WC Docket Nos. 10-90 *et al*., Report and Order and Further Notice of Proposed Rulemaking, 26 FCC Rcd 17663, ¶ 193 (2011).

the case, as the FCC's Form 477 data as of December 2016 showed that there were at least 143,000 unserved locations in Puerto Rico.[13]

Table 2

	CAM Cost > $52.50	Totals	% of Totals
CBs	5,118	55,405	9.24%
Locations (CBs)	31,329	1,670,044	1.88%

Because of the relatively low per location costs estimated, the model distributed a relatively low amount of CAF Phase II support to Puerto Rico. The Commission has acknowledged that the CAM model underestimates the cost of building and maintaining a broadband network for insular areas such as Puerto Rico, yet, given the relatively high density of locations on the island, one would expect the cost per location to be relatively low when compared to other areas in the country. The CAM model results confirm that expectation.

In CAF Phase II, the Commission assumes a 75 percent take rate. PRTC estimates the take rate to be 35 percent, and Liberty estimates the take rate to be 29 percent.[14] The income disparity between Puerto Rico and the mainland, well documented by PRTC and others, may explain much of this difference. In effect, the Commission assumes an "if you build it, they will come" scenario while the experience of PRTC and Liberty is more of an "if you build it, only those few that can afford it will come." This is not to say that the Commission's take rate assumption was incorrect; it was an estimate that was applied across the country in order to allocate a fixed amount of support. But in this analysis, the impact of different take rate assumptions on the determination of the appropriate geographic unit for the Uniendo a Puerto Rico Fund must be evaluated.

In the *Uniendo NRPM*, the Commission proposed to accept proposals for support to satisfy specific service obligations within each of the 78 municipalities, stating that "[u]sing municipios as the basic geographic area for support may allow providers to achieve economies of scale that would not be available if we used smaller areas, such as Puerto Rico's over 900 barrios."[15] It makes intuitive sense that using a larger geographic unit would allow a provider to take advantage of whatever economies of scale or geographic scope exist. For example, it is cheaper to extend networks than to start from scratch and serving 64 subscribers or a single distribution

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13 The FCC Form 477 data show that the census blocks that do not contain a single location with broadband availability contain 143,000 locations. There are many census blocks that are only partially served, *i.e.*, contain at least one location with availability even though other locations within the same census blocks do not have available service.

14 *Liberty Ex Parte*, slide 5.

15 *Uniendo NPRM* at ¶ 47.

fiber run would result in a lower unit (per subscriber) cost than only serving 32. The same logic also holds for fiber feeder, electronics and backhaul. Given the scalability of fiber, the higher the number of customers, the lower the unit cost. Taking advantage of the available economies of scale requires more customers. There are two ways the number of customers may be increased: (a) get more customers from a fixed number of locations through a higher take, or (b) increase the number of locations by expanding the geographic unit. An expanded geographic unit will require an extended network, but economies of scale would still lead to lower per subscriber costs. Expanding the geographic unit is the most viable option in Puerto Rico, which is why PRTC supports the Commission's proposal to use municipalities as the basic geographic area for support.[16]

The Commission also sought comment on whether using a larger geographic unit would allow funding to be targeted in a competitively neutral manner.[17] Using a smaller geographic unit, whether a census block or a CBG, might make sense if the expected take rate was high enough. This is because a high expected take rate would allow the provider to take advantage of a lower unit cost even in a smaller geographic unit. This is especially true in an industry characterized by a high degree of fixed and common cost such as that of telecom network providers.

The Commission's assumption of a 75 percent take rate meant that three out of four locations passed would take the broadband service. This allowed for the recovery of the mostly fixed cost of the network across a relatively large number of customers even with a relatively lower number of locations. The opposite occurs when the take rate is low. The fixed network costs are spread across a smaller number of subscribers, thereby increasing the cost per subscriber. A lower take rate makes it even more difficult to take advantage of any economies of scale in a smaller geographic area. Liberty suggests that this problem may be mitigated by combining CBGs into a common bid.[18] While PRTC agrees that common bids may help mitigate the problem, they will not eliminate it and will lead to a greater number of orphaned areas.

A lower take rate also impacts the amount of customer revenue that may be expected and the amount of support that would be required. Table 3 below shows the impact of the various take rate assumptions on the cost per subscriber. Liberty has assumed a 29 percent take rate, which is less than half of that used by the Commission in CAF Phase II. PRTC estimated that the broadband take rate would be similarly low – 35 percent. The result is that both Liberty and PRTC believe that the cost of the network – mostly fixed – would need to be recovered from a

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16 *Id*.

17 *Id*.

18 *Liberty Ex Parte*, slide 6.

subscriber base that is half of that assumed by the Commission.[19] The lower take rate results in an expected customer revenue that is less than half that expected using the Commission's assumed take rate and ARPU. The lower take rate yields lower customer revenue and results in additional demand for support.

Table 3

	FCC Take Rate & ARPU Assumptions	PRTC Take Rate & ARPU Assumptions	Liberty Take Rate & ARPU Assumptions
Take Rate	75%	35%	29%
Total Locations	1,670,044	1,670,044	1,670,044
Subscribers	1,252,533	584,515	484,313
ARPU	$ 70.00	$ 65.00	$ 50.00
Revenue	$ 1,052,127,720	$ 455,922,012	$ 290,587,656
Total Cost Annual (CAM CID)	$ 553,131,780	$ 553,131,780	$ 553,131,780
Cost per Subscriber	$ 441.61	$ 946.31	$ 1,142.10
Total Surplus/(Deficit)	$ 498,995,940.00	$ (97,209,768.00)	$ (262,544,124.00)

Table 3 above illustrates the impact of a lower take rate on the number of subscribers, cost per subscriber, and the amount of support required. The analysis starts with the CAM model's estimate of the number of pre-hurricane locations in Puerto Rico – 1.67 million. Applying the take rate assumptions results in 1.253 million subscribers under the Commission's 75 percent take rate and much lower subscriber counts for PRTC and Liberty given the significantly lower take rate assumptions. Using the ARPU assumptions ($70 for the Commission, $65 for PRTC and $50 for Liberty), estimated customer revenue is derived by multiplying the ARPU estimates by the number of subscribers. Table 3 shows that the Commission's assumptions lead to estimated customer revenue more than twice as high as that resulting from PRTC's assumptions and three times as high as that resulting from Liberty's assumptions. Given the CAM model's estimated total annual network cost, a surplus or deficiency is calculated as the difference between the estimated annual cost and the expected customer revenue. The Commission's assumptions yield a surplus of $499 million while the PRTC and Liberty assumptions show annual deficits of $97 million and $263 million, respectively. The results indicate that no support would be required under the Commission's take rate and ARPU assumptions. As a result of the lower take rate and ARPU estimated by Liberty and PRTC, significant support is required.

[19] A lower take rate would slightly reduce total network cost as equipment at the customer premises would only be deployed to those locations that subscribe to the service. PRTC understands that this reduction is minimal.

Puerto Rico is unique in that experience has shown that the take rate for broadband is much lower than that found in other parts of the country.[20] This is likely the result of the income disparity between the island and the rest of the nation. Because of the much lower expected take rate, the use of smaller geographic units such as census blocks or CBGs will not allow the provider to take advantage of any available economies of scale. Adopting municipalities as the minimum geographic area will also avoid disputes about the census block or CBG in which a specific location may be found. Municipal boundaries are well known to most Puerto Ricans and are used for several purposes, while census block and CBG boundaries are not well known outside of a small number of demographers.

All parties agree that a primary purpose of the Uniendo Fund is to help restore, improve and expand the telecommunications infrastructure to make broadband available to all locations. Given that the rural areas that are currently unserved are those in which the number of CBGs in a municipality is relatively low, any benefit that would come with using the CBG over the municipality is minimized. At the same time, the use of a smaller geographic unit will increase the number of locations that fall into orphan areas when no provider submits a bid.

PRTC believes that the Commission's proposal to use the municipality as the minimum geographic unit, coupled with the requirement that the provider commit to making broadband available to all locations within it, will maximize broadband availability at the lowest cost.

Please direct any questions regarding this filing to the undersigned.

Respectfully submitted,

/s/ Edgar Class

Edgar Class
Counsel for Puerto Rico Telephone Company, Inc.

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[20] *See, e.g.*, Letter from Javier J. Rúa Jovet, Chairman, Puerto Rico Telecommunications Regulatory Board, to Senator Orrin Hatch, U.S. Senate Committee on Finance (Sept. 2, 2016) (noting that "Puerto Rico is by far the least connected jurisdiction in the United States, with broadband adoption rates more akin to developing nations than metropolitan and rural areas of the United States"), *available at* https://www.finance.senate.gov/imo/media/doc/Puerto%20Rico%20Telecommunications%20Regulatory%20Board.pdf.

cc: Chairman Ajit Pai
Commissioner Michael O'Rielly
Commissioner Brendan Carr
Commissioner Jessica Rosenworcel
Nick Degani
Arielle Roth
Jamie Susskind
Travis Litman
Sue McNeil
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